

EXHIBIT 55

Search this site

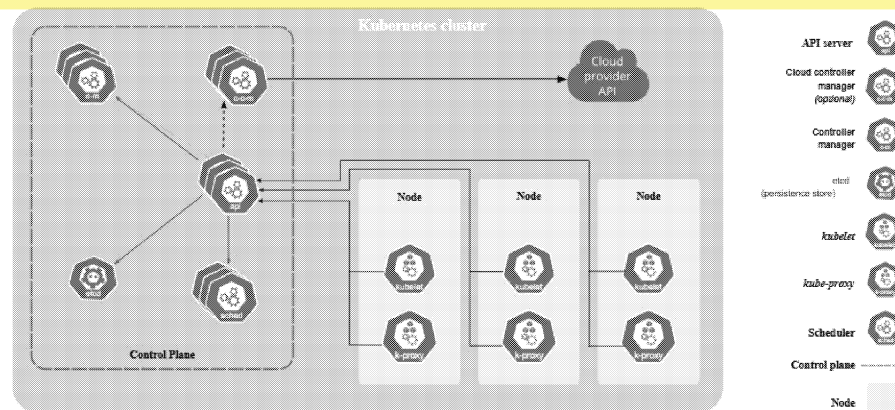
- Documentation
- Getting started
- Concepts
 - Overview
 - Kubernetes Components**
 - Objects In Kubernetes
 - The Kubernetes API
 - Cluster Architecture
 - Containers
 - Workloads
 - Services, Load Balancing, and Networking
 - Storage
 - Configuration
 - Security
 - Policies
 - Scheduling, Preemption and Eviction
 - Cluster Administration
 - Windows in Kubernetes

Kubernetes Documentation / Concepts / Overview / Kubernetes Components

Kubernetes Components

An overview of the key components that make up a Kubernetes cluster.

This page provides a high-level overview of the essential components that make up a Kubernetes cluster.



The components of a Kubernetes cluster

Core Components

A Kubernetes cluster consists of a control plane and one or more worker nodes. Here's a brief overview of the main components:

- Edit this page
- Third party content advice
- Create child page
- Create an issue
- Print entire section
- Core Components
- Control Plane Components
- Node Components
- Addons
- Flexibility in Architecture

Search this site

URL

<https://kubernetes.io/docs/concepts/overview/components/>

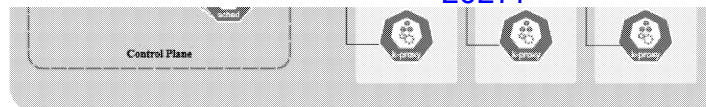
Timestamp

Fri May 23 2025 18:48:53 GMT-0500 (Central Daylight Time)

- Security
- Policies
- Scheduling, Preemption and Eviction
- Cluster Administration
- Windows in Kubernetes

Search this site

- Documentation
 - Getting started
 - Concepts
 - Overview
 - Kubernetes Components**
 - Objects In Kubernetes
 - The Kubernetes API
 - Cluster Architecture
 - Containers
 - Workloads
 - Services, Load Balancing, and Networking
 - Storage
 - Configuration
 - Security
 - Policies
 - Scheduling, Preemption and Eviction
 - Cluster Administration
 - Windows in Kubernetes
 - Extending Kubernetes
- Tasks



The components of a Kubernetes cluster

Core Components

A Kubernetes cluster consists of a control plane and one or more worker nodes. Here's a brief overview of the main components:

Control Plane Components

Manage the overall state of the cluster:

kube-apiserver

The core component server that exposes the Kubernetes HTTP API

etcd

Consistent and highly-available key value store for all API server data

kube-scheduler

Looks for Pods not yet bound to a node, and assigns each Pod to a suitable node.

kube-controller-manager

Runs controllers to implement Kubernetes API behavior.

cloud-controller-manager (optional)

Integrates with underlying cloud provider(s).

Node Components

Run on every node, maintaining running pods and providing the Kubernetes runtime environment:

kubelet

URL

<https://kubernetes.io/docs/concepts/overview/components/>

Timestamp

Fri May 23 2025 18:48:53 GMT-0500 (Central Daylight Time)

- ▶ Scheduling, Preemption and Eviction
- ▶ Cluster Administration
- ▶ Windows in Kubernetes
- ▶ Extending Kubernetes
- ▶ Tasks

Q Search this site

- ▶ Documentation
- ▶ Getting started
- ▼ Concepts
 - ▼ Overview
 - Kubernetes Components**
 - ▶ Objects In Kubernetes
 - The Kubernetes API
 - ▶ Cluster Architecture
 - ▶ Containers
 - ▶ Workloads
 - ▶ Services, Load Balancing, and Networking
 - ▶ Storage
 - ▶ Configuration
 - ▶ Security
 - ▶ Policies
 - ▶ Scheduling, Preemption and Eviction
 - ▶ Cluster Administration
 - ▶ Windows in Kubernetes
 - ▶ Extending Kubernetes

- ▶ Tasks

URL

<https://kubernetes.io/docs/concepts/overview/components/>

Timestamp

Fri May 23 2025 18:48:53 GMT-0500 (Central Daylight Time)

Node Components

Run on every node, maintaining running pods and providing the Kubernetes runtime environment:

kubelet

Ensures that Pods are running, including their containers.

kube-proxy (optional)

Maintains network rules on nodes to implement [Services](#).

Container runtime

Software responsible for running containers. Read [Container Runtimes](#) to learn more.

ⓘ This item links to a third party project or product that is not part of Kubernetes itself. [More information](#)

Your cluster may require additional software on each node; for example, you might also run systemd on a Linux node to supervise local components.

Addons

Addons extend the functionality of Kubernetes. A few important examples include:

DNS

For cluster-wide DNS resolution

Web UI (Dashboard)

For cluster management via a web interface

Container Resource Monitoring

For collecting and storing container metrics

Cluster-level Logging

- ▶ Scheduling, Preemption and Eviction
- ▶ Cluster Administration
- ▶ Windows in Kubernetes
- ▶ Extending Kubernetes
- ▶ Tasks

Q Search this site

- ▶ Documentation
- ▶ Getting started
- ▼ Concepts
 - ▼ Overview
 - Kubernetes Components**
 - ▶ Objects In Kubernetes
 - The Kubernetes API
 - ▶ Cluster Architecture
 - ▶ Containers
 - ▶ Workloads
 - ▶ Services, Load Balancing, and Networking
 - ▶ Storage
 - ▶ Configuration
 - ▶ Security
 - ▶ Policies
 - ▶ Scheduling, Preemption and Eviction
 - ▶ Cluster Administration
 - ▶ Windows in Kubernetes
 - ▶ Extending Kubernetes
- ▶ Tasks

For cluster management via a web interface

Container Resource Monitoring

For collecting and storing container metrics

Cluster-level Logging

For saving container logs to a central log store

Flexibility in Architecture

Kubernetes allows for flexibility in how these components are deployed and managed. The architecture can be adapted to various needs, from small development environments to large-scale production deployments.

For more detailed information about each component and various ways to configure your cluster architecture, see the [Cluster Architecture](#) page.

Items on this page refer to third party products or projects that provide functionality required by Kubernetes. The Kubernetes project authors aren't responsible for those third-party products or projects. See the [CNCF website guidelines](#) for more details.

You should read the [content guide](#) before proposing a change that adds an extra third-party link.

Feedback

Was this page helpful?

Yes

No

Last modified August 26, 2024 at 9:34 AM PST: Tweak long lines in cluster architecture and components (70dafafca5)

URL

<https://kubernetes.io/docs/concepts/overview/components/>

Timestamp

Fri May 23 2025 18:48:53 GMT-0500 (Central Daylight Time)

Eviction







▶ Cluster Administration

▶ Windows in Kubernetes

▶ Extending Kubernetes

▶ Tasks





Last modified August 26, 2024 at 9:34 AM PST: Tweak long lines in cluster architecture and components (70dafafca5)



© 2025 The Kubernetes Authors | Documentation Distributed under CC BY 4.0

© 2025 The Linux Foundation ®. All rights reserved. The Linux Foundation has registered trademarks and uses trademarks. For a list of trademarks of The Linux Foundation, please see our [Trademark Usage page](#)

ICP license: 京ICP备17074266号-3



URL
<https://kubernetes.io/docs/concepts/overview/components/>

Timestamp
Fri May 23 2025 18:48:53 GMT-0500 (Central Daylight Time)

IBM_VM_000193174